



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,832	12/08/2005	Scigo Kano	Q86625	6461
23373 7590 08/20/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER YOUNG, EDWIN	
			ART UNIT 3681	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/536,832

Applicant(s)

KANO ET AL.

Examiner

Edwin A. Young

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-8,11-13,17,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 4,5,9,10,14-16,18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/31/2005 and 2/27/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 3681

DETAILED ACTION

This is the first action on the merits for application 10/536,832. Receipt is acknowledged of the preliminary amendment filed 5/31/2005. Claims 1-20 have been amended. New claim 21 has been entered. Claims 1-21 are currently pending in this application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/JP04/09200, filed on 6/30/2004.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 5/31/2005 and 2/27/2007 have been considered by the examiner.

Drawings

The drawings were received on 5/31/2005. These drawings are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-8, 11-13, 17, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over MORISAWA et al. (US 5,904,631) in view of KOJIMA et al. (US 7,223,200).

Regarding claims 1 and 20, MORISAWA et al. discloses a hybrid driving unit (see Figs. 8-10) comprising an input shaft (124) for inputting motive power from an internal combustion engine (102); an output shaft (108) disposed on an axis in line with said input shaft; a first electric motor (MG1) disposed on said axis and comprising a stator and a rotor; a power-splitting planetary gear (110) disposed on said axis comprising a first rotary element (unlabeled ring gear) coupled with said input shaft, a second rotary element (unlabeled sun gear) coupled with said rotor of said first electric motor and a third rotary element (unlabeled carrier) coupled with said output shaft; a second electric motor (MG5) disposed on said axis and comprising a stator and a rotor; and a transmission (310) disposed on said axis, which shifts and transmits revolution of said rotor of said second electric motor to said output shaft; wherein said first electric motor, said power-splitting planetary gear, said second electric motor and said transmission are provided in a casing member (101) while being disposed in line on said axis; wherein said stators of said first and second electric motors are fixed to said casing member; and wherein said first electric motor, said power-splitting planetary gear, said second electric motor and said transmission are disposed on said axis such that said second electric motor is positioned on a side of a vehicle closer to said internal combustion engine than said first electric motor. However, MORISAWA et al. does not disclose the output shaft engaged with driving wheels.

KOJIMA et al. discloses a hybrid driving unit for a vehicle (see Fig. 5) wherein an output shaft (11) is engaged with driving wheels (19).

Art Unit: 3681

Regarding claim 1, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the output shaft of MORISAWA et al. engage with driving wheels, in light of the teachings of KOJIMA et al., in order to utilize the driving unit in a road vehicle.

Regarding claim 2, MORISAWA et al. discloses said second electric motor (MG5) being disposed in a foremost position in said vehicle among said first electric motor, said power-splitting planetary gear, said second electric motor and said transmission.

Regarding claim 3, MORISAWA et al. discloses said transmission (310) being provided adjacent to said second electric motor (MG5).

Regarding claim 6, MORISAWA et al. discloses said second electric motor (MG5), said transmission (310), said power-splitting planetary gear (110) and said first electric motor (MG1) being disposed in order from a side of said vehicle that is closest to said internal combustion engine (102).

Regarding claim 7, MORISAWA et al. discloses said input shaft (124) passing through an inner peripheral side of said second electric motor (MG5) and said transmission (310); wherein said input shaft is coupled with a ring gear; wherein said output shaft (108) passes through an inner peripheral side of said power-splitting planetary gear (110) and said first electric motor (MG1); and wherein said output shaft is coupled with an output element of said transmission (unlabeled pinion) through an outer peripheral side of said power-splitting planetary gear.

Regarding claim 8, MORISAWA et al. discloses said power-splitting planetary gear (110) comprising a double pinion planetary gear train; wherein said input shaft (124) passes between said transmission and said power-splitting planetary gear; wherein said input shaft is coupled with a ring gear of said double pinion planetary gear train; wherein said output shaft (108) is coupled with a carrier of said double pinion planetary gear train on a side of said transmission through the inner peripheral side of said power-splitting planetary gear; wherein said rotor of said first electric motor (MG1) is coupled with a sun gear of said double pinion planetary gear train; and wherein said output element of said transmission is coupled with said carrier of said double pinion planetary gear train on a side of said first electric motor through an outer peripheral side of said power-splitting planetary gear.

Regarding claim 11, MORISAWA et al. discloses the hybrid driving unit as set forth in claim 1 but does not disclose said second electric motor, said transmission, said first electric motor and said power-splitting planetary gear being disposed in order from a side of the vehicle closest to said internal combustion engine.

KOJIMA et al. discloses in Fig. 5 a hybrid driving unit wherein a second electric motor (MG1), a transmission (3), a first electric motor (MG2) and a power-splitting planetary gear (101) are disposed in order from a side of the vehicle closest to an internal combustion engine (1).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the hybrid driving unit of MORISAWA et al. with the second electric motor, the transmission, the first electric motor and the power-splitting

Art Unit: 3681

planetary gear disposed in order from a side of the vehicle closest to the internal combustion engine, in light of the teachings of KOJIMA et al., in order to reduce the length of the output shaft from the carrier of the power-splitting planetary gear.

Regarding claim 12, MORISAWA et al., as modified by KOJIMA et al., discloses said input shaft (124) passing through an inner peripheral side of said second electric motor (MG5), said transmission (310), said first electric motor (MG1) and said power-splitting planetary gear (110); wherein said input shaft is coupled with said first rotary element (unlabeled ring gear); wherein said output shaft (108) passes through an outer peripheral side of said power-splitting planetary gear; wherein an output element of said transmission (310) passes through an inner peripheral side of said first electric motor and said power-splitting planetary gear; and wherein said output element is coupled with said output shaft.

Regarding claim 13, MORISAWA et al., as modified by KOJIMA et al., discloses said power-splitting planetary gear (110) comprising a double pinion planetary gear train; wherein said input shaft (124) is coupled with a ring gear of said double pinion planetary gear train through a back side of said power-splitting planetary gear; wherein said output shaft (108) is coupled with said carrier of said double pinion planetary gear train on a side of said first electric motor (MG1); wherein said rotor of said first electric motor is coupled with said sun gear of said double pinion planetary gear train; and wherein said output element of said transmission is coupled with the rear side of said carrier of said double pinion planetary gear train through the inner peripheral side of said power-splitting planetary gear.

Art Unit: 3681

Regarding claim 17, MORISAWA et al. discloses said transmission (310) comprising a planetary gear unit.

Regarding claim 21, MORISAWA et al., as modified by KOJIMA et al., discloses said input shaft (124) being coupled with a crankshaft of said internal combustion engine (102); wherein a propeller shaft is coupled with said output shaft (after transmission (101) in Fig. 5 of KOJIMA et al.); and wherein said crankshaft, said input shaft, said output shaft and said propeller shaft are disposed approximately on the same axial line.

Allowable Subject Matter

Claims 4, 5, 9, 10, 14-16, 18 and 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. KLEMEN et al. (US 6,358,173) discloses an electro-mechanical transmission (see Figs. 3-5).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin A. Young whose telephone number is 571-272-4781. The examiner can normally be reached on M-TH 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3681

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SM
EAY

Charles A. Marmor 8/16/07
CHARLES A. MARMOR
SUPERVISORY PATENT EXAMINER
3681